Trade in Services and Japan's Bilateral FTAs: Empirics on their impacts

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Abstract

This paper addresses the economic impacts of free trade agreements (FTAs) on the location choice of Japanese services suppliers. It makes a first-step analysis on the impact of Japan's bilateral FTAs on the Mode 3 (commercial presence)-based trade in services, as there seems to be no detailed quantitative analysis focusing exclusively on those FTAs with a General Agreement on Trade in Services (GATS)-style commitment table. An analysis of aggregate survey results is made. Then, utilizing a newly constructed firm-level database matched with the newly calculated Hoekman Index (for measuring the degree of service sector liberalization) through Mode 3, count data analyses were conducted. Overall, the results reveal some positive correlations between the degree of service trade liberalization in the host country and service firms' commercial presence in that country, hence a policy suggestion for Japan to further promote service trade liberalization under bilateral/plurilateral FTAs.

Keywords: Trade in services, Free trade agreements, ASEAN countries, Location choice

JEL classification: F14, F15, F21

1. Introduction

Trade in services is increasing its share in the world. According to UNCTAD's data, world merchandise trade has been growing at the annual average pace of 7.4 percent since 1980, while trade in services has been growing at the annual average pace of 8.0 percent, a higher pace than that for merchandise trade.[1] Investigating the performance of trade in services especially in connection to free trade agreements (FTAs) is indeed an indispensable research agenda.

Trade in services means trade in "intangibles" requiring natural persons' skills. Since production and consumption of services are, by nature, rather non separable from each other, services trade is carried out through four modes of supply (as defined by the WTO): Mode 1 (cross-border supply of services), Mode 2 (supply of services through consumers' movement abroad), Mode 3 (supply of services through commercial presence) and Mode 4 (supply of services through movement of natural persons).

Trade in services is affected by domestic regulations in force in the sectors concerned in countries. International trade in services is thus sensitive to behind the border, national regulations that affect the supply of services. While existing literature almost exclusively focuses on Mode 1 (cross-border supply of services), this paper focuses on Mode 3, i.e., supply of services through commercial presence. As discussed by Williamson (1985), commercial presence (Mode 3 in terms of trade in services) in general possesses some degree of asset specificity. When the market is not fully perfect, therefore, the demand for Mode 3 is expected to increase. In this sense, a study into Mode 3 is an important research issue.

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[1] Based on the author's calculation based on trade data provided at UNCTAD's site (http://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=722&Sitemap_x0020_ Taxonomy=Statistics;#20;#UNCTAD Home).

The remainder of this paper is structured as follows. Section 2 makes an overview of trade in services in Mode 3 by Japanese service firms, through constructing a database. Section 3 is dedicated to the indexation of service trade liberalization under Japan's EPAs. Section 4 makes a quantitative analysis on the impact of Japan's bilateral EPAs on trade in services in terms of new service investments. Section 5 concludes this paper with some policy suggestions.

2. Overview of trade in services in Mode 3 by Japanese service firms

In order to discuss the performance of trade in services in Mode 3, a database construction has been made as follows: Out of 24,800 entries covered under the database[2] by Toyokeizai Shimposha (various years), Japanese service suppliers' new investments by country and by year have been counted. Table 1 shows the number of Japanese firms' service investments by sector (from 2000 to 2013). Japanese service firms are investing on a global scale, as in the Table. Sector-wise, investments in "04. Distribution Services" and "01. Business Services" are actively made globally. Japan had started forging bilateral FTAs with ASEAN and other countries after 2000. While investment data is known to be rather sparse and sporadic in nature (as compared with trade statistics), there is an increasing trend observed. In 2011, the total number of service investment hit the record high of 644 (as in the Table).

Tables 2-12 show the results of aggregation at the 11 sector level (which is defined by the WTO) by country (each of these countries is Japan's bilateral EPA

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[2] The database provided by Toyokeizai lists Japanese companies that own at least two foreign subsidiaries (with the equity participation rate of more than or equal to 20 percent). Thus, establishments under "franchising arrangements" (seen. e.g., for most convenience stores as part of distribution services) with Japanese companies are not included in the database.

partner). Some observations based on the database construction are as follows. Table 2 shows the result of database construction for Japan-Singapore EPA. Since Japan-Singapore EPA came into effect in November 2002, the years 2003 onwards are covered under the EPA. Before the EPA (including the year of 2002), the average number of new service investment in Singapore was 15.67, while after the EPA, the figure rose to 22.45.[3] By sector, Singapore has been receiving large numbers of service investment in 01.Business Services, 04.Distribution Services, 07.Financial Services and 11.Transport Services.

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[3] Since investment data is known to be rather sporadic and fluctuating, cross-temporal averaging is needed for a comparison before and after the EPA.

Table 1. Number of Japanese firms' new service investments in the world by sector, 2000-2013

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	75	81	71	97	105	100	102	105	116	88	103	181	171	89
02. Communication Services	5	1	5	1	4	3	2	2	3	2	4	5	2	5
03. Construction and Related Engineering Services	8	5	8	10	8	11	8	10	10	6	10	5	12	2
04. Distribution Services	227	274	301	320	307	318	354	250	310	227	241	341	341	201
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	27	24	35	21	36	35	39	46	38	38	30	59	41	22
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	4	3	1	3	3	7	6	1	3	2	3	4	5	1
10. Recreational, Cultural and Sporting Services	0	0	4	1	0	0	2	2	0	0	1	1	2	1
11. Transport Services	44	40	43	43	70	67	45	46	41	18	32	48	51	24
Total	390	428	468	496	533	541	558	462	521	381	424	644	625	345

Toyokeizai Shimposha (various years).

Table 2. Number of Japanese firms' new service investments in Singapore by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	48	1	1	1	3	1	2	5	3	3	3	4	25	12	12
02. Communication Services	4	2	0	1	0	0	0	0	0	0	0	0	0	0	2
03. Construction and Related Engineering Services	12	0	1	1	0	1	2	3	1	0	1	3	1	1	2
04. Distribution Services	382	15	9	7	10	13	6	9	3	14	7	11	12	13	8
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	41	0	0	1	2	3	2	1	3	3	1	4	4	4	2
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	6	0	1	0	0	0	1	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	65	1	1	4	0	1	1	0	3	1	2	2	9	2	0
Total	558	19	13	15	15	19	14	18	13	21	14	24	51	32	26

Source: Toyokeizai Shimposha (various years).

Table 3. Number of Japanese firms' new service investments in Mexico by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	8	0	0	0	0	1	0	0	0	1	1	0	0	0	0
02. Communication Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03. Construction and Related Engineering Services	4	0	1	0	0	3	0	0	0	0	0	0	0	0	0
04. Distribution Services	55	0	1	1	1	1	1	1	6	0	3	2	0	3	12
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	7	1	0	0	1	2	0	1	0	0	0	0	1	3	2
Total	79	1	2	1	2	7	1	2	6	1	4	2	1	6	14

Source: Toyokeizai Shimposha (various years).

Table 4. Number of Japanese firms' new service investments in Malaysia by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	40	0	0	0	1	2	2	1	1	0	1	4	0	5	5
02. Communication Services	3	1	0	0	0	0	0	0	0	0	0	0	1	0	1
03. Construction and Related Engineering Services	26	1	2	0	0	0	0	0	0	0	1	4	2	2	0
04. Distribution Services	152	3	4	4	1	3	7	5	1	7	2	6	5	5	5
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	20	0	0	0	0	0	0	1	2	1	1	0	2	0	0
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
11. Transport Services	37	1	1	1	0	0	1	1	0	1	0	1	0	0	0
Total	280	6	7	6	2	5	10	8	4	9	5	15	11	12	11

Source: Toyokeizai Shimposha (various years).

Table 5. Number of Japanese firms' new service investments in Chile by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02. Communication Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03. Construction and Related Engineering Services	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04. Distribution Services	24	0	0	1	0	1	0	0	0	0	0	0	0	0	0
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	28	0	0	2	0	1	0	0	0	0	0	0	1	0	1

Source: Toyokeizai Shimposha (various years).

Table 6. Number of Japanese firms' new service investments in Thailand by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	39	1	5	2	7	4	4	6	7	9	2	5	7	9	9
02. Communication Services	2	0	0	0	1	0	0	0	0	0	0	0	0	1	2
03. Construction and Related Engineering Services	47	0	1	0	1	0	0	2	1	2	3	1	1	2	1
04. Distribution Services	228	11	17	17	21	19	17	30	21	21	14	16	21	25	17
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	33	0	1	2	4	0	6	6	2	2	0	1	0	0	3
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	3	0	1	0	0	0	0	0	0	0	0	1	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
11. Transport Services	62	1	1	3	1	5	4	3	1	1	3	2	6	5	2
Total	414	13	26	25	35	28	31	47	32	35	22	26	35	43	34

Source: Toyokeizai Shimposha (various years).

Table 7. Number of Japanese firms' new service investments in Indonesia by sector, 2000-2013

	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	29	0	2	0	0	0	1	1	2	0	0	4	9	18	3
02. Communication Services	1	2	0	0	0	0	0	0	0	0	0	0	2	0	0
03. Construction and Related Engineering Services	26	0	1	0	0	1	0	1	0	0	0	0	1	2	1
04. Distribution Services	48	3	2	3	3	5	7	2	5	4	5	2	23	26	17
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	23	0	0	0	0	1	2	1	2	1	0	2	3	0	0
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	21	1	2	1	3	3	3	1	0	0	0	1	3	5	5
Total	152	6	7	4	6	10	13	6	9	5	5	9	41	51	26

Source: Toyokeizai Shimposha (various years).

Table 8. Number of Japanese firms' new service investments in Brunei by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02. Communication Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03. Construction and Related Engineering Services	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04. Distribution Services	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Toyokeizai Shimposha (various years).

Table 9. Number of Japanese firms' new service investments in the Philippines by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	40	1	1	0	0	0	0	0	0	0	1	0	1	4	1
02. Communication Services	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03. Construction and Related Engineering Services	28	1	0	1	0	0	0	0	0	0	0	0	2	0	0
04. Distribution Services	53	3	3	1	0	2	2	1	3	0	1	0	3	7	3
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	14	0	0	0	0	0	0	0	0	0	2	0	0	0	1
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	20	1	1	0	1	1	1	1	1	2	0	1	0	0	0
Total	157	6	5	2	1	3	3	2	4	2	4	1	6	11	5

Source: Toyokeizai Shimposha (various years).

Table 10. Number of Japanese firms' new service investments in Switzerland by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	3	0	0	0	1	0	0	1	0	0	0	0	0	1	0
02. Communication Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03. Construction and Related Engineering Services	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
04. Distribution Services	41	0	0	3	0	0	0	3	0	2	0	2	0	2	0
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	3	1	0	1	0	0	0	0	1	0	0	0	0	0	1
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	51	1	0	4	1	0	0	5	1	2	0	2	0	4	1

Source: Toyokeizai Shimposha (various years).

Table 11. Number of Japanese firms' new service investments in Vietnam by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	13	1	1	1	2	1	2	7	6	3	2	0	4	7	9
02. Communication Services	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
03. Construction and Related Engineering Services	7	0	3	0	0	0	0	1	1	0	2	1	1	2	1
04. Distribution Services	7	0	1	1	0	1	1	3	3	2	3	11	9	24	12
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	2	0	0	0	0	0	0	0	0	0	2	0	1	1	1
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	9	1	0	0	0	0	2	2	1	4	1	3	2	3	2
Total	41	3	5	2	2	2	5	14	11	10	10	15	17	37	25

Source: Toyokeizai Shimposha (various years).

Table 12. Number of Japanese firms' new service investments in Peru by sector, 2000-2013

Sector	Stock before 2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
01. Business Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02. Communication Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03. Construction and Related Engineering Services	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04. Distribution Services	10	0	0	0	0	0	0	0	1	0	0	0	1	0	0
05. Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06. Environmental Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07. Financial Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08. Health Related and Social Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09. Tourism and Travel Related Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Recreational, Cultural and Sporting Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Transport Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	11	0	0	0	0	0	0	0	1	0	0	0	1	0	0

Source: Toyokeizai Shimposha (various years).

Table 3 shows the result of database construction for Japan-Mexico EPA. Since the EPA came into effect in April 2005, the years 2006 onwards are covered under the EPA. Before the EPA (including the year of 2005), the average number of new service investment in Mexico was 2.33, while after the EPA, the figure rose to 4.50. These average numbers are not so large as compared with the case of Singapore, presumably because of the long geographical distance between Mexico and Japan. By sector, Mexico has been receiving a relatively large number of service investment in 04.Distribution Services. Presumably, the geographical distance between Mexico and Japan is so large that the distribution services sector becomes much needed, while on the other hand, other service sectors are not attracting much investment.

Table 4 shows the result of database construction for Japan-Malaysia EPA. Since the EPA came into effect in July 2006, the years 2007 onwards are covered under the EPA. Before the EPA (including the year of 2006), the average number of new service investment in Malaysia was 6.29, while after the EPA, the figure rose to 9.57. Especially after 2010, two-digit numbers of new investments are observed. By sector, 01.Business Services and 04. Distribution Services have been receiving large numbers of new investment both before and after the EPA.

Table 5 shows the result of database construction for Japan-Chile EPA. Since the EPA came into effect in September 2007, the years 2008 onwards are covered under the EPA. Before the EPA (including the year of 2007), the average number of new service investment in Chile was 0.38, while after the EPA, the figure was 0.33, which is a bit lower than the figure before the EPA. By sector, 04.Distribution Services had received the largest number of new investment (yet not after the EPA). Just as in the

case of Mexico, Chile is geographically far away from Japan, which seems to inhibit Japanese service firms' investment in the country.

Table 6 shows the result of database construction for Japan-Thailand EPA. Since the EPA came into effect in November 2007, the years 2008 onwards are covered under the EPA. Before the EPA (including the year of 2007), the average number of new service investments in Thailand was 29.6, while after the EPA, the figure rose to 32.5. By sector, 04.Distribution Services has been receiving a large number of investments, followed by 11.Transport Services.

Table 7 shows the result of database construction for Japan-Indonesia EPA. Since the EPA came into effect in July 2008, the years 2009 onwards are covered under the EPA. Before the EPA (including the year of 2008), the average number of new service investment in Indonesia was 7.33, while after the EPA, the figure jumped to 26.4. In 2011 onwards, the total number of new investments are on an increasing trend. By sector, 04.Distribution Services, 01.Business Services, 07.Financial Services and 11.Transport Services have been attracting new investments.

Table 8 shows the result of database construction for Japan-Brunei EPA. Since the EPA came into effect in July 2008 (together with Japan-Indonesia EPA), the years 2009 onwards are covered under the EPA. Before the EPA (including the year of 2008), the average number of new service investment in Brunei was 0, and the corresponding number after the EPA was also 0. It seems there is not much business interest held by Japanese service suppliers.

Table 9 shows the result of database construction for Japan-Philippines EPA. Since the EPA came into effect in December 2008, the years 2009 onwards are covered under the EPA. Before the EPA (including the year of 2008), the average number of

new service investment in the Philippines was 3.11, while after the EPA, the figure somewhat rose to 5.40. In 2012, the number of new investments recorded a two-digit figure (11). By sector, 01.Business Services and 04.Distribution Services have been receiving relatively large number of new investments.

Table 10 shows the result of database construction for Japan-Switzerland EPA. Since the EPA came into effect in September 2009, the years 2010 onwards are covered under the EPA. Before the EPA (including the year of 2009), the average number of new service investment in Switzerland was 1.4, while after the EPA, the figure somewhat rose to 1.75. By sector, 04.Distribution Services have been receiving a large number of new investments.

Table 11 shows the result of database construction for Japan-Vietnam EPA. Since the EPA came into effect in October 2009, the years 2010 onwards are covered under the EPA. Before the EPA (including the year of 2009), the average number of new service investment in Vietnam was 6.4, while after the EPA, the figure jumped to 23.5. By sector, 01.Business Services and 04.Distribution Services as well as 11.Transport Services have been receiving large numbers of investments.

Table 12 shows the result of database construction for Japan-Peru EPA. Since the EPA came into effect in March 2012, the year 2013 alone is covered under the EPA. Before the EPA, the average number of new investments was 0.15, while after the EPA, the figure is 0. This is mainly because of the geographical distance between Peru and Japan.

While it is not necessarily the case that EPA is *used* for the investment, it is still expected that there is some sort of announcement effects by the EPAs, more specifically the presence of the services chapter within each of the EPAs. In order to

assess the impact of EPAs on Japanese firms' new investment performance, a quantitative method should be sought after. Judging from the fact that these are count data and that there are a lot of entries of zeros, it is reasonable to apply the Poisson regression analysis which deals with count data of rare incidence (including zero).[4]

Theoretically, the most direct economic impact of EPAs is: "the freer the service trade regulation is, the more the number of investments becomes". The next section therefore defines an index (called the Hoekman Index) for measuring the degree of service sector liberalization under EPAs for a further analysis of the linkage between EPAs and service investment.

3.   Indexation of service trade liberalization under Japan's EPAs

As for the measurement of the degree of service trade liberalization, Hoekman (1995) proposes what can be called the "Hoekman Index".[5] While WTO's General Agreement on Trade in Services (GATS) is still ongoing under the current Doha Development Agenda for further multilateral liberalization, its basic framework of negotiation is fully taken into consideration and implemented under the four FTAs in the Asia Pacific region. In a commitment table under WTO's General Agreement on Trade in Services (GATS), four Modes4 i.e., Mode 1 up to Mode 4, and two aspects of liberalization, i.e., market access (MA) and national treatment (NT), are listed in tabular formats. In each service sector, the four modes and two aspects of liberalization make eight "cells", for each of which the existence of limitations is indicated in text.

Such an indication is created by filling in one of the following three

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[4] The standard gravity model is not applicable due to geographically unbalanced nature of the locations of partner countries.
[5] This and the following two paragraphs draw on Ishido (2011).

indications: (1) "none" (in the case of no limitation), or (2) "unbound" (in the case where there is no legally binding commitment made), or (3) description of the limitation. The Hoekman Index method for measuring the GATS-style degree of commitment in the service sector assigns values to each of 8 cells (4 modes and 2 aspects--market access (MA) or National Treatment (NT)--), as follows: N=1, L=0.5, U=0; then calculates the average value by service sector and by country. Using the database constructed, the "Hoekman Index" has been calculated for each 155 sub-sectors. Then the simple average at the level of the 11 sectors is calculated. The database has been constructed for Japan's GATS-style bilateral free trade agreements.

The following agreements have a GATS-style, positive-list services chapter: Japan-Singapore EPA, Japan-Malaysia EPA, Japan-Thailand EPA, Japan-Indonesia EPA, Japan-Philippines EPA, and Japan-Vietnam EPA. Therefore, the Hoekman Index values have been calculated for the partner countries under these EPAs. As for Japan-Mexico EPA, Japan-Chile EPA, Japan-Switzerland EPA and Japan-Peru EPA, they have a negative-list service chapter--not in line with the GATS-style positive listing--and hence they could not be used for Hoekman Index calculation.

Tables 13 shows the results of Hoekman Index calculations (in Mode 3 only for space consideration) for each of Japan's EPAs with a positive-list service chapter. Appendix tables (at the end of the paper) make full listing of the Hoekman Index for all the modes and Mode 3 under the GATS.

Table 13. Hoekman Index for Mode 3 by partner country and by sector

Sector	JSEPA Mode 3	JMEPA Mode 3	JTEPA Mode 3	JIEPA Mode 3	JPEPA Mode 3	JVEPA Mode 3
01. Business Services	0.87	0.47	0.28	0.14	0.20	0.52
02. Communication Services	0.50	0.55	0.32	0.44	0.39	0.73
03. Construction and Related Engineering Services	1.00	0.05	0.40	0.40	0.00	1.00
04. Distribution Services	0.80	0.00	0.22	0.00	0.15	0.80
05. Educational Services	0.80	0.05	0.55	0.15	0.75	0.50
06. Environmental Services	0.00	0.00	1.00	0.00	0.16	0.75
07. Financial Services	0.66	0.59	0.18	0.33	0.62	0.87
08. Health Related and Social Services	0.40	0.25	0.00	0.13	0.19	0.50
09. Tourism and Travel Related Services	0.67	0.13	0.19	0.25	0.44	0.50
10. Recreational, Cultural and Sporting Services	0.40	0.30	0.00	0.00	0.00	0.25
11. Transport Services	0.31	0.06	0.13	0.06	0.37	0.29
Total	0.58	0.22	0.30	0.17	0.30	0.61

Notes: JSEPA stands for Japan-Singapore Economic Partnership Agreement; JMEPA, Japan-Malaysia Economic Partnership Agreement; JTEPA, Japan-Thailand Economic Partnership Agreement; JIEPA, Japan-Indonesia Economic Partnership Agreement; JPEPA, Japan-Philippines Economic Partnership Agreement; and JVEPA, Japan-Vietnam Economic Partnership Agreement.

Source: Calculated from the commitment tables under each of Japan's bilateral EPAs.

Some observations (based on Table 13 as well as the Appendix tables at the back of this paper) are as follows. As for Singapore, the average Hoekman Index in Mode 3 is 0.58, which is the second largest figure after the average of Mode 2 (0.80), followed by Mode 1 (0.44) and Mode 4 (0.00). "03.Construction and Related Engineering Services" has the highest commitment in Mode 3 with the Hoekman Index value of 1.00. The preferential margin (the difference in Hoekman Index values between the EPA and the GATS) in Mode 3 takes its largest value (0.80) in "03.Construction and Related Engineering Services", "04 Distribution Services" and "05.Educational Services".

As for Malaysia, the average Hoekman Index in Mode 3 is 0.22, which is the second largest figure after the average of Mode 2 (0.24), followed by Mode 1 (0.16) and

Mode 4 (0.02). "07. Financial Services" has the highest commitment in Mode 3 with the Hoekman Index value of 0.59. The preferential margin (the difference in Hoekman Index values between the EPA and the GATS) in Mode 3 takes its largest value (0.30) in "10.Recreational, Cultural and Sporting Services".

For Thailand, the average Hoekman Index in Mode 3 is 0.30, which is the second largest figure after the average of Mode 2 (0.32), followed by Mode 4 (0.08) and Mode 1 (0.06). "06. Environmental Services" has the highest commitment in Mode 3 with the Hoekman Index value of 1.00. The preferential margin (the difference in Hoekman Index values between the EPA and the GATS) in Mode 3 takes its largest value (1.00) in "06. Environmental Services".

On Indonesia, the average Hoekman Index in Mode 3 is 0.17, which is the third largest figure after the average of Mode 2 (0.23) and Mode 1 (0.18), followed by Mode 4 (0.09). "02. Communication Services" has the highest commitment in Mode 3 with the Hoekman Index value of 0.44. The preferential margin (the difference in Hoekman Index values between the EPA and the GATS) in Mode 3 takes its largest value (0.40) in "03. Construction and Related Engineering Services".

As for the Philippines, the average Hoekman Index in Mode 3 is 0.30, which is the second largest figure after the average of Mode 2 (0.34), followed by Mode 4 (0.22) and Mode 1 (0.19). "07. Education Services" has the highest commitment in Mode 3 with the Hoekman Index value of 0.75. The preferential margin (the difference in Hoekman Index values between the EPA and the GATS) in Mode 3 takes its largest value (0.75) in "07. Education Services".

Regarding Vietnam, the average Hoekman Index in Mode 3 is 0.60, which is the second largest figure after the average of Mode 2 (0.67), followed by Mode 1 (0.27)

and Mode 4 (0.01). "10. Construction and Related Engineering Services" has the highest commitment in Mode 3 with the Hoekman Index value of 1.00. The preferential margin (the difference in Hoekman Index values between the EPA and the GATS) in Mode 3 takes its largest value (1.00) in "10. Construction and Related Engineering Services".

Overall, the average values of the Hoekman Index in Mode 3 remains rather low: except for Singapore (0.58) and Vietnam (0.61), the average values are less than 0.50, an indication that the "unbound" (no commitment) is dominant in the commitment tables of Malaysia, Thailand, Indonesia and the Philippines. The next section utilizes the Hoekman Index values discussed in this section for a further analysis of the linkage between EPAs and service investment.

4. A quantitative analysis of trade in services in connection to Mode 3

This section makes a count data analysis of the impact of EPAs, combining the investment statistics and Hoekman Index values listed in Table 13 and Appendix tables.[6] The Poisson regression analysis is applied: it is a standard method for analyzing count data especially when the event (service investment for this paper) rarely occurs (count data is much smaller than the population size, i.e., the number of Japanese service firms at home). As for existing literature on investment-location analysis, Guimaraes, Figueirdo and Woodward (2003), and Lambert, McNamara and Garrett (2006) address the validity of using the Poisson regression analysis; Mukim and Nunnenkamp (2010) make a district-level analysis of the location choices of foreign investors. In either of these studies, what is so called Poisson regression analysis is used, as is known in the

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[6]For lack of data, detailed firm-level data such as sales amount and paid up capital, this study confines the scope to the number of initial investments, and more detailed analysis would be a future research agenda.

context of location analysis. The Poisson distribution of probability P(Y=y), i.e., the

probability that a count variable Y takes the value of y, P(Y=y), can be defined as:

$$P(Y=y)=\frac{\mu^y}{y!}e^{-\mu} \quad (y\in \{0,1,2,...\})$$

where

μ: "intensity rate"; and as is known for the Poisson distribution, it holds that

E(Y)=Var(Y)=μ.

The Poisson regression analysis searches for a model for $E(Y_i|x_i)=\mu_i$. Since $\mu_i>0$, it is

reasonable to assume that $\mu_i=\mu_i(\beta)=e^{x_i'\beta}$

or

$$\log(\mu)=\beta_0 + \beta_1 x_{i1} + \cdots + \beta_p x_{ip}$$

where

p: number of explanatory variables. In the analysis, the Hoekman Index values in Mode

3, preferential margin of the EPA in Mode 3 (the difference between the EPA-based

Hoekman Index and the GATS-based Hoekman Index), and the dummy variable of

effective EPA (which takes the value 0.0 before the EPA and 1.0 after the EPA) are

considered.[7] The agglomeration effect is also considered: the presence of existing

service locations (i.e., the number of investments in the previous year) is included as an

explanatory variable.

The data set is first treated as a panel data, with 6 groups (partner countries).

Table 14 shows some of the results of the Poisson panel-data analysis. The result in the

Table shows that overall, there seems to be a positive impact of EPA on the

service-suppliers' new investment decisions in the EPA partner country. (Since the

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[7] This section makes a "before-after" analysis of the impacts of EPAs; more data would be needed for undertaking a "with-without" analysis through incorporating information on countries other than EPA partners. This remains a future research agenda.

Hoekman Index is a rather "crude" and time-invariant index, more detailed analyses are not feasible, hence this rather parsimonious approach.)

Table 14. Results of the Poisson Panel data regression (with all the six EPAs)

Dependent variable (right)	Number of New FDI	Number of New FDI
Independent variable (below)	Fixed Effect	Random Effect
Stock of FDI	0.0069824*** (0.000)	0.0069807*** (0.000)
Mode 3 Hoekman Index	0.5072871*** (0.000)	0.4932661*** (0.000)
Constant		-0.3462632 *** (0.075)
No. of observations	924	924
No. of groups	6	6
Log Likelihood	-1538.30	-1573.36

Notes: Figures in parentheses denote p-values. * p<0.10, ** p<0.05, *** p<0.01
      In the case of Poisson regression, the usual Hausman Test for diagnosing which of the two assumptions (fixed effect and random effect) is desirable, is not applicable.
Source: Made by the author.

In order to consider country-wise effects of EPAs, the data is segmented by country across different years from 2000 to 2013. Tables 19-24 show the results of Poisson regressions for Singapore, Malaysia, Thailand, Indonesia, the Philippines and Vietnam, respectively. Hoekman Index values under the GATS as well as the "preferential margin" (i.e., the difference between the EPA-based Hoekman Index value minus the GATS-based Hoekman Index value) are also included.[8]

As for Singapore (Tale 15), there is a positive correlation between the number of new service investments and the existing stock of FDI in each of the 11 sectors, an indication that service-sector agglomeration matters for further investments. While the

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[8] "Time trend" has also been considered, yet not with a significant result, as in the Tables 15-20. This is mainly because the "before-after" analysis, by its very nature, is not able to distinguish between the time-trend effect and the impact coming from the "one-shot" policy change coming from an effective EPA.

EPA dummy does not have a statistically significant correlation, Mode 3 Hoekman Index and Mode 3 preferential margin both correlate positively and significantly with the number of new service investments. One important consideration is that when the linear trend (Trend in the Table) is introduced, the term has a positive significant impact, while the EPA dummy has a negative significant impact. Given that the linear trend is indeed created by policy changes including the introduction of preferential service trade agreements, the situation of multi-colinearity seems to apply. And without the trend term, both the M3 Hoekman Index and Mode 3 preferential margin have statistically significant positive impacts on the number of new FDI.

Table 15. Results of Poisson regression for Singapore

Dependent variable (right)	Number of New FDI	Number of New FDI	Number of New FDI	Number of New FDI
Independent variable (below)				
Stock of FDI	0.0051158*** (0.000)	0.005229*** (0.000)	0.0047434*** (0.000)	0.0049449*** (0.000)
Trend	0.066351*** (0.001)			
EPA dummy	-0.2976295* (0.058)	0.1759498 (0.272)		
Mode 3 Hoekman Index			1.016641*** (0.000)	
Mode 3 preferential margin				0.380709* (0.088)
Constant	-0.2942607* (0.058)	-0.2260747 (0.143)	-0.576524*** (0.000)	-0.2047453* (0.069)
No. of observations	154	154	154	154
Pseudo R^2	0.3700	0.3589	0.3839	0.3607

Notes: Figures in parentheses denote p-values. * p<0.10, ** p<0.05, *** p<0.01
Source: Author's estimates.

Table 16. Results of Poisson regression for Malaysia

Dependent variable (right)	Number of New FDI	Number of New FDI	Number of New FDI	Number of New FDI
Independent variable (below)				
Stock of FDI	0.0152182*** (0.000)	0.0153993*** (0.000)	0.0182667*** (0.000)	0.0157328*** (0.000)
Trend	0.0662682 (0.183)			
EPA dummy	-0.3003177 (-0.76)	0.1547815 (0.434)		
Mode 3 Hoekman Index			2.489238*** (0.000)	
Mode 3 preferential margin				0.7208695 (0.717)
Constant	-1.608406 (0.000)	-1.402792*** (0.000)	-1.845105*** (0.000)	-1.359835*** (0.000)
No. of observations	154	154	154	154
Pseudo R^2	0.3777	0.3737	0.4129	0.3726

Notes: Figures in parentheses denote p-values. * $p<0.10$, ** $p<0.05$, *** $p<0.01$
Source: Author's estimates.

Table 17. Results of Poisson regression for Thailand

Dependent variable (right)	Number of New FDI	Number of New FDI	Number of New FDI	Number of New FDI
Independent variable (below)				
Stock of FDI	0.0083346*** (0.000)	0.008282*** (0.000)	0.007987*** (0.000)	0.0081896*** (0.000)
Trend	-0.0156782 (0.540)			
EPA dummy	-0.5576402*** (0.004)	-0.6556226*** (0.000)		
Mode 3 Hoekman Index			-2.010799*** (0.000)	
Mode 3 preferential margin				-2.214049*** (0.000)
Constant	0.2303188* (0.054)	0.1765822** (0.032)	0.1541301* (0.059)	0.1000019 (0.214)
No. of observations	154	154	154	154
Pseudo R^2	0.5748	0.5746	0.5678	0.5687

Notes: Figures in parentheses denote p-values. * p<0.10, ** p<0.05, *** p<0.01
Source: Author's estimates.

Table 18. Results of Poisson regression for Indonesia

Dependent variable (right)	Number of New FDI	Number of New FDI	Number of New FDI	Number of New FDI
Independent variable (below)				
Stock of FDI	0.031493*** (0.000)	0.0311624*** (0.000)	0.0346265*** (0.000)	0.0346761*** (0.000)
Trend	-0.0198338 (0.639)			
EPA dummy	0.6201285* (0.054)	0.4934463*** (0.004)		
Mode 3 Hoekman Index			1.285045** (0.054)	
Mode 3 preferential margin				2.158331*** (0.005)
Constant	-1.102386 (0.000)	-1.17799*** (0.000)	-1.162201*** (0.000)	-1.1717*** (0.000)
No. of observations	154	154	154	154
Pseudo R^2	0.5062	0.5059	0.5000	0.5041

Notes: Figures in parentheses denote p-values. * p<0.10, ** p<0.05, *** p<0.01
Source: Author's estimates.

Table 19. Results of Poisson regression for Philippines

Dependent variable (right)	Number of New FDI	Number of New FDI	Number of New FDI	Number of New FDI
Independent variable (below)				
Stock of FDI	0.0516727*** (0.000)	0.0506152*** (0.000)	0.0522814*** (0.000)	0.0517379*** (0.000)
Trend	-0.0724717 (0.291)			
EPA dummy	0.6917459 (0.207)	0.2024535 (0.466)		
Mode 3 Hoekman Index			1.101267 (0.230)	
Mode 3 preferential margin				-0.2607376 (0.853)
Constant	-2.536628*** (0.000)	-2.792866*** (0.000)	-2.8863*** (0.000)	-2.737941*** (0.000)
No. of observations	154	154	154	154
Pseudo R^2	0.3777	0.3736	0.3765	0.3718

Notes: Figures in parentheses denote p-values. * $p<0.10$, ** $p<0.05$, *** $p<0.01$
Source: Author's estimates.

Table 20. Results of Poisson regression for Vietnam

Dependent variable (right)	Number of New FDI	Number of New FDI	Number of New FDI	Number of New FDI
Independent variable (below)				
Stock of FDI	0.0622375*** (0.000)	0.064263*** (0.000)	0.0576547*** (0.000)	0.0593824*** (0.000)
Trend	0.0449474 (0.313)			
EPA dummy	-0.225875 (0.479)	0.0144395 (0.948)		
Mode 3 Hoekman Index			0.7968055*** (0.003)	
Mode 3 preferential margin				0.9579533*** (0.001)
Constant	-1.292805*** (0.000)	-1.077612*** (0.000)	-1.172427*** (0.000)	-1.143667*** (0.000)
No. of observations	154	154	154	154
Pseudo R^2	0.4280	0.4264	0.4392	0.4433

Notes: Figures in parentheses denote p-values. * $p<0.10$, ** $p<0.05$, *** $p<0.01$
Source: Author's estimates.

As for Malaysia (Table 16), there is a statistically significant positive correlation between the stock of FDI and the number of new service investments. Mode 3 Hoekman Index also has a statistically positive correlation with the number of new service investments, although the EPA dummy and Mode 3 preferential margin do not

show a statistical significance. When the linear trend term is introduced, it does not have a statistically significant impact, and the result seems to be rather "disturbed", presumably because of the rather ad-hoc imposition of the linearity on the trend term.

On Thailand (Table 17), the agglomeration effect (i.e., the impact of stock of FDI) has statistically significant correlation with the number of new service investments, yet the EPA dummy, Mode 3 Hoekman Index and Mode 3 preferential margin all have *negative* and statistically significant correlations with the number of new service investments. And the trend term is not statistically significant. The country had once received a lot of manufacturing as well as services investments before the EPA, and it was only after that period that the EPA was considered. The EPA came about as a result of the close economic tie between Thailand and Japan. Since service investments, together with manufacturing ones, have the feature of temporary intermittence (i.e., after the surge of investments, there is a period of less investments[9]), there is a negative linkage between the EPA and the number of service investments.

For Indonesia (Table 18), the stock of FDI, Mode 3 Hoekman Index and Mode 3 preferential margin all possess statistically significant and positive correlations with the number of new service investments. The trend term is not statistically significant.

On the Philippines (Table 19), the stock of FDI has a positive and statistically significant correlations with the number of new service investments, yet the EPA-related variables (EPA dummy, Mode 3 Hoekman Index and Mode 3 preferential margin) do not have statistically significant correlations with the number of new service investments, whether the linear trend term (which itself is not statistically significant) is introduced or not. Since the Philippines is famous for its own unique policy of

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[9] The large-scale flood of 2011 in Thailand, which hit its economy severely, might have had an offsetting impact in terms of inviting new service investments.

dispatching natural persons abroad, its Mode 4 has a uniquely high average value of Hoekman Index (as in Table A5). This fact might have a rather distracting influence on the Mode 3-related linkage.

As for Vietnam (Table 20), the stock of FDI has a statistically significant positive correlation with the number of new service investments. The linear trend term is not statistically significant. As for the EPA-related variables, the EPA dummy does not correlate significantly, but Mode 3 Hoekman Index and Mode 3 preferential margin correlate positively and significantly with the number of new service investments.

5. Conclusions and policy suggestions

Since there are supporting functions with trade in services, e.g., professional services, banking services and distribution services contribute to the establishment of factories for manufacturing, elucidating determinants of service investments is a crucial policy consideration. This paper has made an overview of Japanese service suppliers' new investment abroad. The paper has then made a count-data analysis of new service investments. The "before-after analysis[10]" of new service investments indicates, overall, that the economic impact of EPA on the number of new service investments seems positive. There seems to be an issue of the limitation of linear trend which is rather indistinguishable from the introduction of service trade liberalization under the bilateral FTAs. That said, the correlation (if not causality) between service trade liberalization and new investment creation is more or less confirmed in the Poisson regression analysis, and that is the major value-added of this paper.

As for scope of future analyses, inter-modal analysis (including the

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[10] Another approach would be "with-without analysis", in which the investment performance in non-FTA partners are also considered. This remains a future research agenda.

inter-linkage between, say, Mode 1 and Mode 3, or between Mode 4 and Mode 3) would be needed. Also, more theoretically-informed conjectures would be desirable. It is conjectured, for instance, that inter-modal correlation analysis reveal complementarity of Mode 3 (supply of services through commercial presence) and Mode 4 (supply of services through movement of natural persons). On the other hand, some degree of substitutability is expected between Mode 1 (cross-border supply of services) and Mode 3 (supply of services through commercial presence).

Another line of theoretical conjecture concerns the nature of service investment as the "solution to market imperfection" (including contractual incompleteness): since it is not feasible to micro-manage every possible demand from the customers, face-to-face communication through establishment of commercial presence (i.e., Mode 3) becomes imperative (as posited by e.g., Williamson, 1985). In other words, the "residuals" information can only be captured through direct linkage with the market demand. In that case, Mode 3 of service supply becomes indispensable. Mode 3 is a non-market (and second-best only) solution to market imperfection: Transactions costs arising from the complexity of service demands from customers/clients (for instance, the provision of cross-border transport services for manufacturing firms in the face of ever-fluctuating and hence unpredictable market conditions) would necessitate face-to-face communication through Mode 3.

While it should be noted that actual (or current) service regulation is different from what are described in commitment tables, the latter (commitment tables) give stability to the actual service regulation. Given this, service sector liberalization under EPAs is meaningful for service investment creation. Preferably, though, the existing bilateral EPAs should converge into a single agreement with a single service-trade

package: after all, the transaction cost associated with the presence of bilateral EPAs is deemed rather high. It would therefore be desirable for Japan to aim for a pluri-lateral EPA with harmonized regulatory commitments in service trade. This research is an embryonic yet "first-of-its-kind" analysis toward a more fine-tuned treatment of service suppliers' investment decision making in connection to free trade agreements.

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Appendix. Full list of Hoekman Index calculation by partner country and by mode

Table A1. Hoekman Index for Singapore under Japan-Singapore EPA (JSEPA) and GATS by sector and by mode

Sector	JSEPA Mode 1	JSEPA Mode 2	JSEPA Mode 3	JSEPA Mode 4	GATS Mode 3	Preferential margin, Mode 3
01. Business Services	0.78	0.98	0.87	0.00	0.28	0.59
02. Communication Services	0.50	0.50	0.50	0.00	0.14	0.36
03. Construction and Related Engineering Services	1.00	1.00	1.00	0.00	0.20	0.80
04. Distribution Services	0.40	0.80	0.80	0.00	0.00	0.80
05. Educational Services	0.80	0.80	0.80	0.00	0.00	0.80
06. Environmental Services	0.00	0.25	0.00	0.00	0.00	0.00
07. Financial Services	0.34	0.90	0.66	0.00	0.39	0.27
08. Health Related and Social Services	0.00	1.00	0.40	0.00	0.00	0.40
09. Tourism and Travel Related Services	0.67	1.00	0.67	0.00	0.25	0.42
10. Recreational, Cultural and Sporting Services	0.20	0.80	0.40	0.00	0.20	0.20
11. Transport Services	0.16	0.74	0.31	0.00	0.06	0.26
Total	0.44	0.80	0.58	0.00	0.14	0.45

Source: Calculated from Singapore's commitment tables under JSEPA and the GATS.

Table A2. Hoekman Index for Malaysia under Japan-Malaysia EPA (JMEPA) and GATS by sector and by mode

Sector	JMEPA Mode 1	JMEPA Mode 2	JMEPA Mode 3	JMEPA Mode 4	GATS Mode 3	Preferential margin, Mode 3
01. Business Services	0.51	0.52	0.47	0.02	0.47	0.00
02. Communication Services	0.01	0.04	0.55	0.00	0.55	0.00
03. Construction and Related Engineering Services	0.00	0.20	0.05	0.00	0.00	0.05
04. Distribution Services	0.00	0.00	0.00	0.00	0.00	0.00
05. Educational Services	0.00	0.00	0.05	0.00	0.00	0.05
06. Environmental Services	0.00	0.00	0.00	0.00	0.00	0.00
07. Financial Services	0.64	0.67	0.59	0.19	0.45	0.15
08. Health Related and Social Services	0.25	0.25	0.25	0.00	0.25	0.00
09. Tourism and Travel Related Services	0.25	0.50	0.13	0.00	0.00	0.13
10. Recreational, Cultural and Sporting Services	0.00	0.40	0.30	0.00	0.00	0.30
11. Transport Services	0.11	0.11	0.06	0.00	0.06	0.01
Total	0.16	0.24	0.22	0.02	0.16	0.06

Source: Calculated from Malaysia's commitment tables under JMEPA and the GATS.

Table A3. Hoekman Index for Thailand under Japan-Thailand EPA (JTEPA) and GATS by sector and by mode

Sector	JTEPA Mode 1	JTEPA Mode 2	JTEPA Mode 3	JTEPA Mode 4	GATS Mode 3	Preferential margin, Mode 3
01. Business Services	0.00	0.30	0.28	0.04	0.02	0.26
02. Communication Services	0.23	0.29	0.32	0.09	0.32	0.00
03. Construction and Related Engineering Services	0.00	0.40	0.40	0.00	0.00	0.40
04. Distribution Services	0.00	0.22	0.22	0.00	0.00	0.22
05. Educational Services	0.20	0.60	0.55	0.15	0.00	0.55
06. Environmental Services	0.00	1.00	1.00	0.25	0.00	1.00
07. Financial Services	0.12	0.16	0.18	0.18	0.18	0.00
08. Health Related and Social Services	0.00	0.00	0.00	0.00	0.00	0.00
09. Tourism and Travel Related Services	0.00	0.25	0.19	0.06	0.00	0.19
10. Recreational, Cultural and Sporting Services	0.00	0.00	0.00	0.00	0.00	0.00
11. Transport Services	0.11	0.26	0.13	0.06	0.11	0.01
Total	0.06	0.32	0.30	0.08	0.06	0.24

Source: Calculated from Thailand's commitment tables under JTEPA and the GATS.

Table A4. Hoekman Index for Indonesia under Japan-Indonesia EPA (JIEPA) and GATS by sector and by mode

Sector	JIEPA Mode 1	JIEPA Mode 2	JIEPA Mode 3	JIEPA Mode 4	GATS Mode 3	Preferential margin, Mode 3
01. Business Services	0.17	0.22	0.14	0.11	0.00	0.14
02. Communication Services	0.58	0.58	0.44	0.29	0.20	0.24
03. Construction and Related Engineering Services	0.00	0.40	0.40	0.40	0.00	0.40
04. Distribution Services	0.00	0.00	0.00	0.00	0.00	0.00
05. Educational Services	0.60	0.60	0.15	0.05	0.00	0.15
06. Environmental Services	0.00	0.00	0.00	0.00	0.00	0.00
07. Financial Services	0.07	0.07	0.33	0.06	0.33	0.00
08. Health Related and Social Services	0.25	0.25	0.13	0.00	0.00	0.13
09. Tourism and Travel Related Services	0.25	0.25	0.25	0.06	0.25	0.00
10. Recreational, Cultural and Sporting Services	0.00	0.00	0.00	0.00	0.00	0.00
11. Transport Services	0.11	0.11	0.06	0.06	0.04	0.02
Total	0.18	0.23	0.17	0.09	0.07	0.10

Source: Calculated from Indonesia's commitment tables under JIEPA and the GATS.

Table A5. Hoekman Index for the Philippines under Japan-Philippines EPA (JPEPA) and GATS by sector and by mode

Sector	JPEPA Mode 1	JPEPA Mode 2	JPEPA Mode 3	JPEPA Mode 4	GATS Mode 3	Preferential margin, Mode 3
01. Business Services	0.20	0.33	0.20	0.19	0.02	0.18
02. Communication Services	0.42	0.75	0.39	0.39	0.31	0.07
03. Construction and Related Engineering Services	0.00	0.00	0.00	0.00	0.00	0.00
04. Distribution Services	0.15	0.20	0.15	0.15	0.00	0.15
05. Educational Services	0.80	1.00	0.75	0.50	0.00	0.75
06. Environmental Services	0.14	0.19	0.16	0.13	0.00	0.16
07. Financial Services	0.00	0.00	0.62	0.00	0.62	0.00
08. Health Related and Social Services	0.00	0.25	0.19	0.19	0.00	0.19
09. Tourism and Travel Related Services	0.25	0.50	0.44	0.44	0.21	0.23
10. Recreational, Cultural and Sporting Services	0.00	0.00	0.00	0.00	0.00	0.00
11. Transport Services	0.11	0.48	0.37	0.44	0.06	0.31
Total	0.19	0.34	0.30	0.22	0.11	0.19

Source: Calculated from the Philippine's commitment tables under JPEPA and the GATS.

Table A6. Hoekman Index for Vietnam under Japan-Vietnam EPA (JVEPA) and GATS by sector and by mode

Sector	JVEPA Mode 1	JVEPA Mode 2	JVEPA Mode 3	JVEPA Mode 4	GATS Mode 3	Preferential margin, Mode 3
01. Business Services	0.53	0.57	0.52	0.00	0.51	0.00
02. Communication Services	0.66	0.75	0.73	0.00	0.42	0.31
03. Construction and Related Engineering Services	0.00	1.00	1.00	0.00	0.00	1.00
04. Distribution Services	0.20	0.80	0.80	0.00	0.20	0.60
05. Educational Services	0.10	0.80	0.50	0.10	0.00	0.50
06. Environmental Services	0.13	0.75	0.75	0.00	0.25	0.50
07. Financial Services	0.24	0.94	0.87	0.00	0.24	0.63
08. Health Related and Social Services	0.50	0.50	0.50	0.00	0.50	0.00
09. Tourism and Travel Related Services	0.50	0.50	0.50	0.00	0.50	0.00
10. Recreational, Cultural and Sporting Services	0.00	0.40	0.25	0.00	0.00	0.25
11. Transport Services	0.09	0.40	0.29	0.00	0.09	0.21
Total	0.27	0.67	0.61	0.01	0.25	0.36

Source: Calculated from Vietnam's commitment tables under JVEPA and the GATS.